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Central Intelligence Agency

Washington, D.C. 20505

MEMORANDUM FOR: Mr. Michael H. Armacost
Under Secretary of State for
Political Affairs

SBUJECT: Libyan Oil: Value to Italian Refiners [redacted] 25X1

Attached is the analysis you requested assessing constraints Italian refiners would face in switching from Libyan crude oil. We believe that alternative crudes are available and that switching would be relatively easy from a technical standpoint. The major discouragement is economic--specifically the costs to Italian refiners of walking away from Libyan price discounts and costs of adjustments necessary to accommodate other crudes.

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Richard Kerr
Deputy Director for Intelligence

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Libyan Oil: Value to Italian Refiners

From a technical standpoint, the main refineries in Italy that process Libyan crude could switch fairly easily to other crudes. These refineries have sophisticated equipment, including secondary refining facilities to handle and process a variety of types and qualities of crudes. Switching, however, would incur costs to the refiners because Libya offers sizable discounts on its more waxy crudes, and because some adjustments to equipment and processing would be required to produce the same products from different crudes. In our judgment, these costs--including the foregone discounts--could amount to as much as $50 million in the first year. 25X1

Technical Considerations. Libyan crude can be divided into two general categories: a) light (high API gravity), low sulfur crudes such as Zueitina, Brega and Sirtica, and b) light, low sulfur, high pour point (waxy) crudes such as Bu Attifel, Amna and Sarir. The first group contains high quality crudes, but these require no special handling and are easy to replace with other crudes. 25X1

The waxy crudes require special handling facilities such as heated storage tanks, and secondary processing facilities such as catalytic crackers to further refine their residual components into usable products. The high paraffinic naphtha yield of these crudes is used to make petrochemicals. A number of high gravity, low sulfur crudes from the Atlantic Basin area could be substituted for waxy Libyan crudes to produce petrochemical feedstocks. We have identified substitutes for both categories of Libyan crude in Table 1. 25X1

We have also identified three main refineries in Italy that process Libyan crude oil (in Table 2). Each is modern and equipped to process many different crude oils. In general, the more sophisticated the refinery, the less expensive it is to switch crude feedstocks. At least two of the facilities are probably equipped to maximize output of naphtha and supply nearby petrochemical plants owned by the same companies. Several smaller Italian refineries also process Libyan crude from time to time. 25X1

Economic Considerations. Although technically feasible, switching to alternative crudes would entail some real and opportunity costs for Italian refiners. Waxy Libyan crudes are primarily attractive to Italian refiners because of the discounts--relative to other high gravity crudes--Libya offers to offset costs associated with their difficult handling characteristics. For example, Bu Attifel--AGIP's equity crude--reportedly is discounted by about $1.00-1.50 per barrel, although contract details generally are not available. Besides lost

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discounts, the refiners would incur higher transportion costs associated with buying crude outside the Mediterranean (as much as $0.25/barrel). In addition, there would be blending costs, adjustments to refinery equipment, and logistical, distribution and other costs (possibly $0.10/barrel). Applied to the discounted Libyan crudes (about 100,000 b/d) these costs could total as much as $50 million in the first year. 25X1

Italian refiners receive Libyan oil under barter and compensation agreements as well as through their equity shares. If the Italians ran alternative crudes through their refineries, they might have difficulty selling the Libyan oil they have contracted for under these arrangements. 25X1

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Table 1
Substitutes for Libyan Crude Oil*

Country/Crude	Gravity °API	Sulfur WT o/o	Pour Point	Estimated $/bbl Spot Sales Price
Libya				
Amna	36	.15	+75°F	N/A
Bu Attifel	41	.10	+39°C	N/A
Brega	40	.21	+30°F	N/A
Es Sider	37	.45	-1°C	12.80
Sarir	37	.14	+26°C	12.50
Sirtica	43	.43	-3°C	N/A
Zueitina	40	.23	+55°F	14.00
Other North Africa				
Algeria				
Arzow Blend	44	.10	-21°C	13.30
Zarzaitine	42	.08	-9°C	N/A
West Africa				
Angola				
Cabinda/Takula	33	.15	+65°F	N/A
Nigeria				
Bonny Light	38	.13	+36°F	13.90
Brass River	43	.08	-5°F	N/A
Escravos	36	.16	+50°F	N/A
Forcados	31	.18	+5°F	13.30
North Sea				
UK				
Brent Blend	38	.26	+25°F	13.80
Ninian Blend	36	.41	+45°F	N/A
Forties	37	.28	-3°C	N/A
Norway				
Ekofisk Blend	44	.13	+3°F	14.00
Statfjord	38	.27	+20°F	N/A

*There is some excess capacity available for most of these crude streams.

East Asian

China				
Daqing	33	.04	+95°F	N/A
Indonesia				
Ardjuna	38	.12	+80°F	N/A
Minas	35	.09	+90°F	11.55
Handil	31	.09	+35°C	N/A
Jatibarang	29	.11	+110°F	N/A
Malaysia				
Labuan Light	36	.07	+60°F	N/A

Table 2
Major Italian Refiners Processing Libyan Crude

Refinery	Location	Capacity	Notes
Saras	Milano	360,000 b/d	Very large and modern refinery. Boasts that it "has the flexibility to admit, stock, and handle any kind of crude oil through any processing stage." Probably supplies the nearby Saras petrochemical plant with feedstocks.
Montedipe (SELM)	Priolo	350,000 b/d	Fairly modern, equipped with cracking and visbreaking facilities. Can handle many different crudes. Probably supplies the Montedipe petrochemical plant in Priolo with feedstocks.
ISAB	Melilli	240,000 b/d	Has upgrading units like visbreakers, gofiners, etc. Dedicates a portion of its facilities to process crude for third parties, and therefore is probably fairly flexible. No associated petrochemical plant identified.

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SUBJECT: Libyan Oil: Value to Italian Refiners (U)

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Central Intelligence Agency
Office of the Deputy Director for Intelligence

6/12/86

MEMO TO: DDI

FROM: EA/DDI

SUBJECT Response to Armacost Request

[redacted] Armacost requested the attached memo in a conversation with the DDCI -- Jim forwarded the request over the phone to OGI. The paper is pretty straightforward and seems to appropriately answer Armacost's question about Italian refineries and their ability to switch to non-Libyan oil. Suggest you okay the memo and sign the cover sheet. Armacost requested the paper be forwarded this afternoon. 25X1

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